We claim:

1. A well logging system comprising:

(a) a downhole well data sensor;

(b) a downhole data transmitter;

(c) a surface data receiver; and

(d) a data transmission cable linking the transmitter and the receiver, the cable having at least one pair of insulated conductors wound in a substantially helical twist, an insulation sheath surrounding the twisted pair of conductors and a tensile load carrier surrounding the insulation sheath, the load carrier comprising a sheath of tensile load carrying filaments.

2. A well logging system as described by claim **1** wherein the transmitter and receiver each includes a signal modem complimentary to each other.

3. A well logging system as described by claim **2** wherein the modems utilize data encoding and decoding methods selected from the group consisting of (i) QAM, (ii) CAP, and (iii) DMT.

4. A well logging system as described by claim **1** wherein the filaments are distributed about a perimeter of the load carrying sheath in radial layers.

5. A well logging system as described by claim **2** wherein wire size respective to filaments in outer radial layers of the sheath are greater than those of interior layers.

6. A well logging system as described by claim **1** wherein the cable has seven twisted pairs of insulated conductors within the insulation sheath.

7. A well logging data cable comprising :

(a) a twisted pair of signal conductors, each of the conductors being separately insulated;

(b) an insulation sheath surrounding the twisted pair of conductors; and

(c) a tensile load sheath surrounding the insulation sheath, the tensile load sheath comprising a plurality of filaments.

8. A data cable as described by claim **7** comprising at least 6 twisted pairs of conductors disposed around a center conductor, all conductors being within the insulation sheath.

9. A data cable as described by claim **7** wherein the filaments are distributed about a perimeter of the tensile load sheath in radial layers.

10. A system as described by claim **1** wherein the sensor is selected from the group consisting of (i) a pressure sensor, (ii) a temperature sensor and (iii) a flow sensor.

11. A data cable as described by claim **7** having an effective capacitance between the twisted pair of conductors of less than 30 pF per foot of cable length.

12. A method of transmitting a signal from within a well borehole to a surface location comprising:

(a) transmitting the signal with a downhole data transmitter;

(b) conveying the signal on a data transmission cable linking the transmitter and to a surface receiver, the cable having at least one pair of insulated conductors wound in a substantially helical twist, an insulation sheath surrounding the twisted pair of conductors and a tensile load carrier surrounding the insulation sheath, the load carrier comprising a sheath of tensile load carrying filaments.

13. A method according to claim **12** wherein the transmitting and receiving the signal are accomplished using complimentary signal modems.

14. A method according to claim **13** wherein the signal is encoded and decoded using decoding methods selected from the group consisting of (i) QAM, (ii) CAP, and (iii) DMT.